Remarks

Claims 1-41 are pending in this Application. Reconsideration in view of the above amendments and the following remarks is respectfully requested.

Amendments concerning forces of the jaw fingers and the plunger pin in claims 1, 16, 38 and 39 have basis in description at, for example, page 16, lines 13-14, page 19, lines 9-10, and Figs. 15-16D. The amendments concerning proceeding or terminating the installation in claims 38 and 39 have basis in the respective claims as originally filed and in the description at, for example, page 19, line 30 - page 20, line 2.

In support of this following arguments, Applicant submits herewith two Declarations under 37 C.F.R. § 1.132. One of the Declarations is made by Pentti Eromäki, the inventor of the present application. The other Declaration is made by Matti Juhala, a professor of vehicle engineering at Helsinki University of Technology.

Interview Summary

Applicant's representative conducted a telephone interview with Examiner Maki on December 18, 2007 and December 20, 2007. The rejections under 35 U.S.C. § 112, first paragraph, were discussed in the interview. No agreement with respect to the claims was reached.

Rejection of Claims 1-42 Under 35 U.S.C. § 112, First Paragraph (Written Description)

The Office Action rejects claims 1-42 under 35 U.S.C. § 112, first paragraph, for allegedly failing to comply with the written description requirement. More specifically, the Office Action alleges that the limitation "said at least one anti-slip stud is rotated about the stud center line relative to the jaw fingers from the first stud orientation to a second, predetermined stud orientation, if the first stud orientation differs from the predetermined stud orientation, as said stud is driven through the stud capturing space" is new matter. This rejection is respectfully traversed.

Support for this claim limitation is found throughout the original specification. For example, page 4, lines 18-24 of the application states: "the main object of the invention is to realize a non-round anti-slip stud and its installation tool, by which, when used together, *i.e.*, as a

combination, there can be a vehicle tire tread [studded] . . . by studs other than round in shape, so that a predetermined direction or dimension . . . can in each case be arranged at a desired angle with respect to the tire rotation [direction], *i.e.*, so that the anti-slip stud can be orientated." Page 5, lines 22-24 of the application states: "Here the first type of bottom flange configuration is utilized together with the jaw fingers of the installation tool to attain a predetermined orientation of the anti-slip studs in respect to the rotation axis line of the tire." Page 6, lines 9-12 of the application states: "Here the second type of bottom flange configuration is utilized together with the jaw fingers of [the] installation tool to attain a predetermined orientation of the anti-slip studs in respect to the rotation axis line of the tire."

Moreover, page 8, lines 14-18 of the application states: "Figure 5 illustrates an embodiment according to the invention of an anti-slip stud provided with a hexagonal bottom flange and an elongate hard cermet piece, as well as six jaw fingers that match with said hexagonal flange, by which jaw fingers the orientating installation of the studs is carried out, seen from the side of the hard cermet piece, corresponding to the direction IV of figures 16A-16D." (emphasis added.) Direction IV is the direction of the path of the stud as it is driven through the jaw fingers of the installation tool Similarly, page 8, lines 18-23 of the application states: "Figure 6 illustrates an embodiment according to the invention of an anti-slip stud provided with a pentagonal bottom flange and an elongate hard cermet piece, as well as five jaw fingers that match with said pentagonal bottom flange, by which jaw fingers the orientating installation of the studs is carried out, seen from the side of the hard cermet piece, corresponding to the direction IV of figures 16A-16D." Additionally, the brief description of Figs. 7-15 and 19-20 of pages 8-10 makes clear that the application discloses various embodiments where the shape of the bottom flange of the stud in combination with an installation tool having a certain number of jaw fingers is effective to achieve a desired orientation for the stud. Each of the independent claims as originally filed in Finland and in the U.S. expressly defined that the combination of the bottom flange configuration and a specific minimum number of jaw fingers as required by the shape of the bottom flange is the key feature of the invention for attaining a predetermined orientation of the studs.

The feature of the jaw fingers functioning to cause a stud to adopt a predetermined orientation as the stud is driven through the jaw fingers is disclosed in various passages of the present application, including: page 4, line 18 - page 7, line 20, page 8, line 4 - page 9, line 27,

and page 18, line 19 - page 20, line 2, and especially page 16, lines 4-31 together with respective Figs. 15, 16A-16D, describing how the jaw fingers work to cause a stud to adopt a predetermined orientation as the stud is driven through the jaw fingers. During movement of each single stud through the stud capturing space, see Fig. 16A to 16D, the jaw fingers move only radially, but force the stud, which is pressed downwards into the space between the jaw fingers, to rotate, if they do not happen to be in the correct orientation, as disclosed in the application at, for example, page 7, lines 16-17, 21-22, 26-27, page 8, lines 1-2, 5-6, 10-11, 17-18, page 10, lines 6-7 and page 18, lines 19-22. *I.e*, the jaw fingers are charged by the radial force F* against each other, and at the same time the studs are pushed by means of the plunger pin and by the axial force F (Figs. 16B-16D) between the jaw fingers and into the stud recess, whereupon radial force F* (Fig. 15) forces the stud to rotate between the jaw fingers into the specific orientation in respect to the tool, which orientation is determined by the specified shape of the stud in question and the respective specified number of jaw fingers (the number of jaw fingers for the installation tool is selected to match with the shape of the stud's bottom flange in a way defined in the claims), as evident from the application at, for example, page 16, lines 4-31 and page 18, line 29 - page 20, line 2, and Figs. 15 -16D, and page 9, lines 20-27 (which states, in part, that "Figs. 16A-16D illustrate, as the steps of the installation method according to the invention"). In the invention, it is a question of the interaction between specified shape of the stud, the respective number of jaw fingers, the radial force F* urging the jaw fingers radially toward each other and the axial force F. ***Nothing else is needed in order to rotate the stud.*** The passages at page 16, lines 4-31 and page 18, line 19 - page 20, line 2 together with Figs. 16A-16D describe the key features of the orientative operation of the tool.

Applicant points out that there is a translation error on page 20, line 16. This passage should not include a simple passive verb. The original Finnish text (the priority document) states: ".. *asennetut liukuestenastat 20 ovat ...* ***kääntyneinä*** ..", [emphasis added] where the key defining "ovat kääntyneinä" consists of a verb and a nominal form, in fact a verbal adjective in essive of plural, which case (case ending) "essive" describes a state of the object after the process directed to it has been finished (in other words, the state of the object as a result of the process). Thus, the correct translation of the sentence beginning on page 20, line 15 and ending on line 18 should be: "*Now the installed anti-slip studs 20 are in such a position, in which they have been ended after being turned around their stud center lines 30 . . . .* " Similar translation errors are

on pages 17 and 20 of the application as filed. This obvious translation error is obvious also on the basis of at least the sentence "the bottom flange and the hard cermet piece is utilized together with the rotated jaw fingers of installation tool to attain predetermined orientations of the anti-slip studs" on page 7, lines 5-6, which clearly says that the jaw fingers are rotated beforehand in the predetermined orientating position, and the actual installation work is proceeded only after this.

A person of ordinary skill in the art would anyway readily understand the operation disclosed above on the basis of the application (in spite of possible translation errors), and that the various embodiments of the installation tool disclosed in the application cause a stud to rotate about its longitudinal axis and assume a predetermined orientation as the stud is driven through the jaw fingers of the installation tool, as evident from the attached Declaration of Professor Matti Juhala.

The Office Action contends that the original disclosure merely describes installing studs in a tire in a predetermined orientation by rotating the fingers of the installation tool once the stud is inserted into a stud recess of the tire. **This contention is totally incorrect**. The application does not disclose this kind of operation step anywhere. The description of the application discusses rotating of the jaw fingers only in the context of producing tires having groups, in which the studs have different orientations. Page 9, lines 20-27 of the application specifically defines that Figs. 16A-16D "*illustrate, as the steps of the installation method according to the invention*", which steps are described more in detail in the passage from pages 18, line 29 - page 20, line 2 referring to Figures 16A-16D and starting with the clear sentence "The above described combination is used by applying the following process steps according to the invention." In a similar way, page 20, lines 12-19 states (concerning studs that are similar to each other): "*In order to install such anti-slip studs in an orientating way, at least the jaw fingers 3, 4, 5, 6 of the installation tool 1 are rotated around their jaw center lines 10 for the measure of the toe-out angle K, as marked by dotted lines in figure 15 and in figures 1A and 3A in relation to figure 2. Now the installed anti-slip studs 20 are turned around their stud center lines 30 for the measure of the toe-out angle K, because the jaw fingers force the bottom flange 22 to turn along for the same toe-out angle, so that the hard cermet pieces 27 are orientated in the tire in a predetermined position with respect to said rotation axis line P2*", *i.e.*, at first the tool is adjusted to have an intended rotational position and only after that the studs are

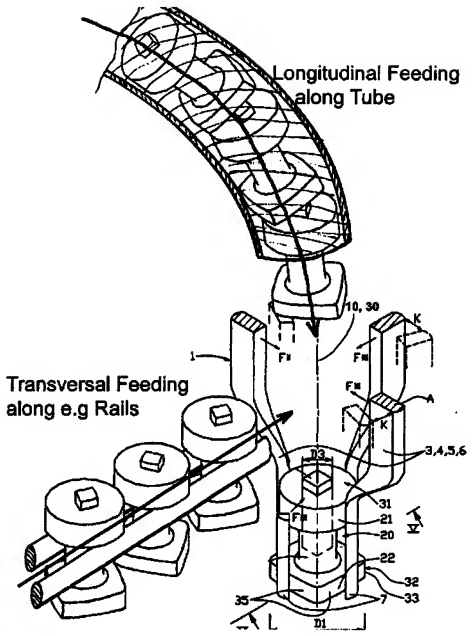
fed between the jaw fingers, where the above mentioned interaction causes the studs to rotate into their intended orientation with respect to the tool body. Accordingly, the key features to orientate the studs with respect to the tool with jaw fingers do not include rotation of the jaw fingers when the studs are between the jaw fingers.

A person of ordinary skill in the art would understand (see Declaration of Matti Juhala) that the tool with the jaw fingers shall, of course, be mounted in the wanted/desired correct (rotational) position before actual installation of the studs in order to ensure that the studs pushed therethrough would be in the intended final orientation with respect to the tire, and that mounting the jaw fingers or turning the tool body with the jaw fingers so as to have said wanted/desired correct position of the tool prior to starting the stud installation work is a step that is distinct from the actual orientating rotation of studs between the jaw fingers charged by the radial force against each other, while pushed by the plunger pin. The passage from page 20, line 3 - page 21, line 4 describes various ways to change the desired final orientation: **one way** [page 20, lines 3-19] is to turn the tool while using the same type of studs, whereupon studs in the orientation of Figs. 1B, 2 and 3B are attained with a first orientation of the tool, studs in the orientation of Figs. 1A are attained with a second orientation of the tool, and studs in the orientation of Figs. 3A are attained with a third orientation of the tool, as disclosed page 20, lines 3-15; **another way** [page 20, line 20 -page 21, line 4] is to change the type of studs and keep the tool in the same orientation all the time. During those steps when the jaw fingers are in the positions shown in Figs. 16B-16D and the anti-slip stud is between these jaw fingers, the tool with said jaw fingers shall not be rotated in respect to the tire.

The Applicant points out that the Assignee of the present application is utilizing the combination according to this invention and the method according to this invention continuously in mass production, where about 300 million non-round studs are installed every year into about 3,000,000 tires. No other company is believed to install non-round studs, at least not on a mass production basis. Accordingly, **it can be seen that this invention provides the only practical system to install non-round studs.**

The Office Action contends that the capability of the jaw fingers to cause a stud to rotate a stud moving through the jaw fingers is not inherently disclosed because the structure of the feeding mechanism that feeds studs to the installation tool is not shown. The Office Action further states that "it would be pure speculation to conclude that the orientation of the stud changes as the stud is driven through the stud capturing space." In reply, Applicant notes that the feeding mechanism is not responsible for causing the studs to rotate as they pass through the jaw fingers of the installation tool, and therefore it is not a requirement that the application illustrate the feeding mechanism. The installation tool as claimed in the present application is capable of causing a stud to rotate as it is driven through the stud capturing space between the jaw fingers, no matter what type of feeding mechanism is used. Applicant is not claiming a feeding mechanism or an apparatus that changes the orientation of each and every stud. Instead, Applicant is claiming an installation tool that is capable of performing the recited function. The fact that the feeding mechanism is not expressly shown in the application does not render the installation tool incapable of performing the claimed function (changing the orientation of the studs). Indeed, even if the installation tool is used with a feeding mechanism that feeds each and every stud into the installation tool in same orientation, the installation is still capable of changing the orientation of the studs, as required in the claims.

Further, a person of ordinary skill in the art would see that there is at least two possible feeding systems available and useful for feeding studs into the orientating tool of the invention: (i) "*axial feeding*" and (ii) "*transversal feeding.*" In "*axial feeding*" the studs enter the installation tool at random positions, and longitudinally with respect to each other, along the longitudinal center axis of the jaw fingers of the installation tool. In "*transversal feeding*" the studs enter along guides at random positions with their longitudinal axes being transverse or perpendicular to their feeding direction, which is transversal or perpendicular to the longitudinal center axis of the jaw fingers of the installation tool. These two alternatives are illustrated in the picture below. There are evidently also other possibilities to feed studs into the tool, and accordingly the discussed and shown variants are examples only, which do not limit the scope of the invention.



Finally, the attached Declarations are further evidence that the installation tool described in the present application functions in the manner recited in the claims.

Hence, claims 1, 16, 38 and 39 comply with the written description requirement of § 112, first paragraph. Accordingly, withdrawal of the written description rejection of claims 1, 16, 38 and 39, as well as respective dependent claims 2-15, 17-37 and 40-42, under § 112 is respectfully requested.

Rejection of Claims 1-42 Under 35 U.S.C. § 112, First Paragraph (Enablement)

The Office Action also rejects claims 1-42 under 35 U.S.C. § 112, first paragraph, for allegedly failing to comply with the enablement requirement. This rejection is respectfully traversed.

The enablement requirement under 35 U.S.C. § 112, first paragraph, requires that the specification describe the invention in such terms to allow one skilled in the art to make and use the invention as claimed. The apparatus disclosed in the application would inherently cause a stud to rotate about the stud center line relative to the jaw fingers to assume the correct predetermined stud orientation (unless the stud is already in the correct stud orientation when loaded into the space between the jaw fingers). Thus, Applicant submits that the specification

describes the claimed subject matter in sufficient detail to enable one skilled in the art to make and use the claimed subject matter.

Accordingly, withdrawal of the enablement rejection of claims 1, 16, 38 and 39, as well as respective dependent claims 2-15, 17-37 and 40-42, under § 112 is respectfully requested.

Rejection of Claims 1-6, 8-22, and 30-42 Under 35 U.S.C. § 103

Claims 1-6, 8-22 and 30-42 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 3,385,742 ("Pettersson") in view of at least one of U.S. Patent Application Publication No. 2002/0050312 ("Ostrovskis") and Russian Patent No. 2,152,318 ("Russia"). Applicant respectfully traverses this rejection.

Claims 1 and 16 recite a combination for installing anti-slip studs that comprises, among other features, at least one anti-slip stud and an installation tool having jaw fingers with "tip portions defining a stud capturing space", and "said jaw fingers being charged by a radial force against each other." The anti-slip stud is "drivable into and through the stud capturing space by actuation of the plunger pin by an axial force towards the stud recess." Further, the claims specify that "by contact of each jaw finger with a respective one of the at least two first and the at least two second side portions of the bottom flange, said at least one anti-slip stud is rotated about the stud center line relative to the jaw fingers from the first stud orientation to a second, predetermined stud orientation, if the first stud orientation differs from the predetermined stud orientation, as said stud is driven through the stud capturing space." Further, the claims specify "a number of jaw fingers equal to twice the number of said second side portions," or "a number of jaw fingers equal to the number of said edge portions." Claims 38 and 39 recite similar limitations.

For the reasons discussed below, the applied combination of Pettersson and either one or both of Ostrovskis and Russia does not render obvious the combination of features recited in independent claims 1, 16, 38 and 39. For example, the applied combination of references does not teach, disclose, or suggest a stud installation tool and a stud having a particular shape such that it is caused to rotate about its center line and assume a predetermined orientation as the stud is driven through the jaw fingers of the tool. Generally speaking, Pettersson is not concerned with stud orientation relative to its stud center line, Ostrovskis is not concerned with jaw fingers, and Russia is not concerned with using jaw fingers to adjust the orientation of a stud.

Accordingly, even if one were motivated to try combining the applied references, which one would not be, the resulting method and apparatus would not include each and every feature recited in the independent claims.

One of Ordinary Skill in the Art Would Not Have Had a Reasonable Expectation of Success of Using Non-Round Studs in Pettersson's Installation Tool

The Office Action contends that "[o]ne of ordinary skill in the art would have had a reasonable expectation of success using Pettersson's stud installation tool to install out of round studs into premade holes." Applicant disagrees.

Whereas Pettersson's device includes jaw fingers and is adapted to install studs with round flanges, Ostrovskis's and Russia's devices are adapted to install studs with non-round flanges yet both devices employ tube technology that is substantially different from that of Pettersson. The three pusher rods 16, which correspond a plunger, and two lips 14 in Russia are not used and cannot be used to handle the non-round portion of the stud, and the Ostrovskis device does not even have any fingers, lips, pushers, etc. Conventional wisdom therefore teaches against using the type of installation tool disclosed in Pettersson when installing studs having non-round flanges. MPEP § 2146(D)(2), p. 2100-161 provides that it is improper to combine references where the references teach away from their combination. Here, the teachings of Ostrovskis and Russia run directly contrary the teachings of Pettersson, and therefore one would not combine Pettersson with Ostrovskis and/or Russia.

Moreover, Pettersson issued in 1968 from an application filed in 1963, which claimed priority to a foreign application filed in 1962. Studs with non-round flanges also have been known for decades. If Applicant's device was obvious, the skilled artisan having knowledge of the Pettersson technology certainly would have already arrived at the solution posed by Applicant in the present application. However, despite the fact that installation tools of the type shown in Pettersson and studs with non-round flanges have been known for decades, Applicant of the present application is the first to conceive the novel combination of features recited in present claims.

Further, the Pettersson apparatus could not be used to properly install a stud of Ostrovskis. The figure shown below is original figure 3 from Ostrovskis but has been modified to include the jaw fingers 17, 18, 19 of Pettersson. Pettersson, as presently understood, does not

suggest any radial force that could direct or charge the jaw fingers towards each other and against the stud! Pettersson indeed has an elastic ring 28a, which might cause a force for the jaw fingers, but this force as presently understood is not applied against the spikes to the extent necessary to effectively handle and orient the spikes because Pettersson clearly teaches that compressive forces against the spikes shall be avoided by defining that, column 2, lines 5-12, "the jaw fingers are preferably spread apart by means of any suitable power means before inserting the spike between the fingers.", and column 3, lines 47-52 "..so that the **cam member will urge the fingers outwardly** in the slots 23 and the free end portions 17a, 18a, 19a of the fingers located in the hole 11 will expand the wall of the hole and **leave space for moving the spike** by means of the plunger to a position between the end portions of the fingers..." [emphasis added]. *I.e.*, Pettersson teaches that the cam member must move the jaw fingers outwardly so as to provide a free room for the spike. This is contrary to the Invention as claimed in our Application. Even if the jaw fingers will press against the spike 1, and would apply a force on the spike as indicated by the arrows added to Figure 3, the jaw fingers 17, 18, 19 of Pettersson would not adequately grip the stud, and thus the stud would likely tilt, misrotate, incline or slide **out of** engagement between the jaw fingers, or cause one end of the stud to elevate or be lowered with respect to the opposite end when pressure from the jaw fingers is applied to the stud.

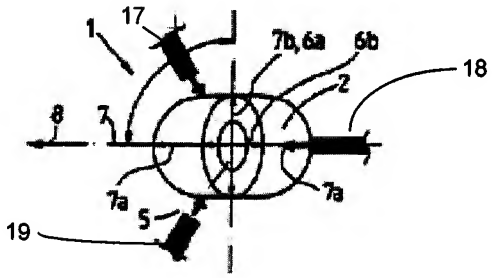


Figure 3

As recognized by Pettersson, and commonly known in the art, a tilted, eccentric, or otherwise inaccurately positioned stud would result in an ineffective and improper installation of the stud. Accordingly, the Pettersson apparatus would not work properly to install the stud disclosed in Ostrovskis. Therefore, without some indication of the relationship between the number of jaw fingers of the Pettersson apparatus and the shape of the Ostrovskis stud, there would have been no reasonable expectation of success to use the Pettersson apparatus to install non-round studs as taught by Ostrovskis.

Still further, the rotation of the sleeve 25 and the plunger 22 using handles 31, 34 according to Pettersson would destroy any orientation if somehow attained, which is not possible as described above.

Neither Pettersson Nor Russia Teaches or Suggests Using Four Jaw Finger for a Non-Round Stud

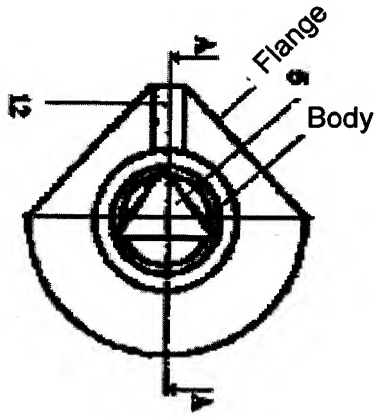
The Office Action contends that "it would have been obvious to one of ordinary skill in the art to use four fingers in Pettersson's stud installation tool in view of "(1) Pettersson's teaching to use 'a number of fingers' such as 'three radially movable jaw fingers 17, 18 and 19' in order to expand the wall of the hole into which the stud is inserted and optionally (2) Russia's suggestion to associate a pusher 16/lip 14 for *each side* of an out of round stud (see figures 15-19)." (emphasis in original.) The Office Action further contends that the limitation "the installation tool comprising a number of jaw fingers equal to twice the number of said second side portions [of the stud flange]" is suggested "by (A) Pettersson's teaching to contact the bottom flange of a stud with a number of fingers and (B) the out of round cross-sectional shaped bottom flange of the stud suggested by Ostrovskis and/or Russia."

First, Applicant notes that Pettersson does not suggest using a specific number of jaw fingers based on the number of side portions of a stud flange. Since Pettersson only discloses installing studs with round flanges, Pettersson inherently does not teach or suggest using a specific number of jaw fingers based on the number of side portions of a stud flange. Second, Pettersson's device requires only three jaw fingers to effect expansion of stud hole in a tire. To facilitate expansion of a hole, Pettersson teaches using of an internal cam member 26 (FIG. 7) or other power means, rather than using additional jaw fingers. Pettersson explains that the compressive forces of the wall of the hole (that receives a stud) against the jaw fingers can damage the head (bottom flange) of a stud as the stud is driven through the jaw fingers, Column 2, lines 5-12. To solve this problem, Pettersson provides a rotatable cam 26 that is effective to spread apart the jaw fingers before the stud is inserted between the jaw fingers. Accordingly Pettersson discloses that the cam member urges the jaw fingers outwardly, Column 3, lines 47-52, and consequently the surrounding elastic ring 28a is prohibited to cause any pressing force against the spikes. Here Pettersson in fact teaches that the fingers preferably must not be charged against each other and against the stud, *i.e.*, Pettersson clearly teaches away

from the invention of the present application. During installation of a stud, handles 31, 34 are rotated while handle 29 is held still. Rotation of handles 31, 34 is effective to rotate the cam member 26, which causes the jaw fingers 17, 18, 19 to spread apart and expand the wall of the hole, leaving a space for inserting the stud. Column 3, lines 30-53. Consequently, because the hole can be expanded to size sufficient to permit a stud to be easily inserted into the hole without damage to the stud by simply activating the handles 31, 34, there does not appear to be any need for additional jaw fingers to further expand the hole. If anything, adding more jaw fingers to Pettersson would unnecessarily complicate the device without providing any apparent benefit, and therefore the skilled artisan would be deterred from modifying the Pettersson device in this manner.

Second, Russia does not suggest use of a jaw finger for each side of an out of round stud. Applicant respectfully submits that the Office Action's interpretation of Russia is incorrect. As shown in Fig. 19 (below), the pusher rods 16 (which correspond a plunger) positioned conically around the guide tube and extend through slit openings 17 of the guide tube 11 and may contact the cylindrical body 1 of the stud, but not the non-round periphery of the bottom flange 2 of the stud. Even if they make contact with the cylindrical body, the pushers rods cannot promote orientation of the studs (see Figs. 11 (stud) and 19 (stud, guide tube, pusher rods) duplicated below). According to the text of Russia, page 8, left column, lines 19-25, "The piston moves the pusher rods in its own moving direction, whereupon the free ends of the rods extending via slits 17 abut against the antiskid stud closest to the outlet opening.", and page 7, right column, lines 47-56, "The piston 18 of the cylinder unit spring-loaded to the control chamber 19 of the cylinder unit is mounted movably along the charging tube in axial direction. The rods 16 are connected to the piston 18 at their other ends." No other action than the linear movement in the direction of the tube and the respective pressing of the stud in the longitudinal direction is mentioned in Russia, no radial movement is allowed for pushers, and hence no rotating effect can be present. According to Fig. 19 of Russia, the pusher rods 16 press on the substantially planar upper surface of the bottom flange 2, which substantially planar surface is perpendicular to the length of the stud. Therefore, the pusher rods 16 absolutely do not contact and cannot contact the outer periphery of bottom flange 2, which is the only non-round part of these studs, and thus have no disclosed or apparent association with the shape of the flange. Just because the bottom flange 2 of the stud in Russia has sides and the device of Russia may have three pushers

16, does not mean that there is a taught or suggested association between the number of sides of the bottom flange and the number of pushers. Without more, the fact that the number of sides of the bottom flange is equal to the number of pushers 16 is purely a coincidence recognizable only with the aid of Applicant's disclosure, and not a teaching or suggestion to be relied upon by one skilled in the art.



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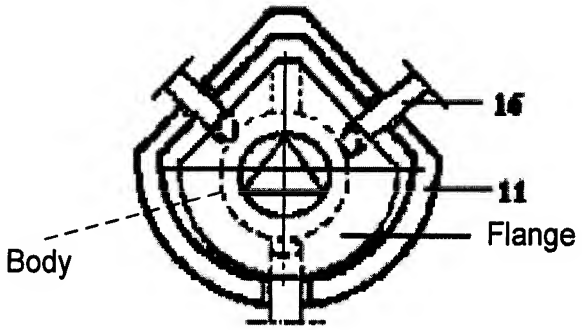

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Third, because the pusher rods 16 extend through the slit openings 17 in the wall of the non round-guide tube and contact a stud, which at the same time is non-round and situated within this non-round guide tube with a matching cross-sectional form, the guide tube 11 prohibits any purported orientating of stud by pushers. *I.e.*, the pusher rods cannot under any circumstances orientate the studs. It shall be also noted that gaps for attaining obligatory tolerances between any components or parts in any device are never to be considered as means for different installation positions, but they are in order to avoid mutual sticking of the parts/components, and accordingly, gaps and the like shall be neglected. This is clear to any person skilled in the art of technical constructions.

As to the lips 14 of Russia, the action contends that "one of ordinary skill in the art would readily appreciate that the tool of Russia does and/or should have three lips (fingers) and (2) the lips (fingers) of Russia do and/or should contact the stud" because the same device includes three pushers 16 and because Russia's tool is similar to Pettersson's tool. Applicant disagrees with the Office Action's assertion that Russia suggests a lip 14 for each side of an out of round stud. Figs. 15 and 16 of Russia show only two lips 14 and thus Russia does not even show one lip for each side of an out of round stud, much less suggests such an association. Further, the

pushers 16 are used for "to push the antiskid stud", e.g. page 7, right column, lines 30-33 of Russia, which is a different function than the lips 14 that serve only for expanding the hole in the tire tread, as explained below. Just because Russia's tool includes three pusher rods 16, it does not follow that the same device also includes three lips 14. Further, it is improper to conclude that Russia's tool includes three lips because Pettersson's tool includes three jaw fingers. There is no evidence in Russia that that the tool has or requires more than two lips 14 to operate.

The two lips 14 according to Russia are used only for widening the hole in the tire tread as disclosed, *e.g.*, in the Abstract, and page 7, right column, lines 22-24, "The free ends of the lips are formed expander sections for the hole in the pattern block of the tire tread.", and page 8, left column, lines 25-29, "Further movement of the piston leads to that the antiskid stud brings the lips apart thus expanding the pattern block hole." of Russia. Neither two lips, nor three symmetrically positioned lips/fingers according to Pettersson, nor any other number of symmetrically positioned fingers/jaws can change the orientation of the studs for various reasons, but **even if the lips could change the orientation in a measurable amount** in the device of Russia**, the only result is that the orientation attained with the non-round tubes is lost**, whereupon the studs again have random orientations. The lips of Russia can only randomize the stud orientations.

Moreover, the flange of the stud in Russia has circular sections, just like Ostrovskis, in which sections every point is located at the same distance from the center point, and two linear sections, which linear sections are either parallel, as in Figs. 2-3, or have an angle therebetween, as in Figs. 11-12 and 18-19. Peripheral sections being part of a circle are not "side" sections of any form. Anyway, if Russia suggests associating a pusher 16 and a lip 14, then figures 11 and 19 would show four pushers 16. Clearly, it does not. Accordingly, Russia clearly does not contain a suggestion to associate one lip 14 with each side of an out of round stud. As already mentioned above, at least a flange according to Figs. 18-19 of Russia does not allow to be orientated by any amount of symmetrically positioned jaw fingers. None of the prior art publications discloses such jaw fingers that could orientate the studs of Russia.

Accordingly, for at least the above reasons, the applied combination of references does not render obvious the subject matter of claims 1, 16, 38 and 39. Therefore, withdrawal of the rejection of claims 1, 16, 38 and 39 for obviousness is respectfully requested.

Claims 2-6, 8-15 and 40, being dependent upon base claim 1, claims 17-22, 30-37 and 41, being dependent upon the previous claims, are allowable for at least the same reasons as for the respective base claims, as well as in view of the respective additional features recited these dependent claims. Therefore, withdrawal of the rejection of claims 2-6, 8-15, 17-22, 30-37 and 40-41 for obviousness is respectfully requested.

Rejection of Claims 7, 8, 29 and 30 Under 35 U.S.C. § 103(a)

The Office Action rejects claims 7, 8, 29 and 30 under 35 U.S.C. § 103(a) for alleged obviousness over Pettersson in view of at least one of Ostrovskis and Russia, and further in view of U.S. Patent No. 6,374,886 ("Eromaki"). This rejection is respectfully traversed.

As discussed above, the applied combination of Pettersson and at least one of Ostrovskis and Russia does not render obvious independent claims 1 and 16.

Claims 7 and 8, being directly dependent upon base claim 1, and claims 29 and 30, being directly dependent upon base claim 16, are allowable for at least the same reasons as for the respective base claims, as well as in view of the respective additional features recited in these dependent claims. Therefore, withdrawal of the rejection of claims 7, 8, 29 and 30 for obviousness is respectfully requested.

Rejection of Claims 23-28 Under 35 U.S.C. § 103(a)

The Office action rejects claims 23-28 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Pettersson in view of at least one of Ostrovskis and Russia, and further in view of Finland Patent No. 9/65 ("Finland") or Japanese Patent No. 56-146407 ("Japan"). Applicant respectfully traverses this rejection.

As discussed above, the applied combination of Pettersson, Ostrovskis, and Russia fail to render obvious the subject matter of independent claim 16.

Applicant submits that neither Finland nor Japan provide for the deficiencies of Pettersson, Ostrovskis and Russia. For example, neither Finland nor Japan teach, disclose or suggest an association between the number of jaw fingers and the cross-sectional shape of a non-round anti-skid stud. Also, Finland and Japan do not teach, disclose or suggest rotating a stud from a first stud orientation with respect to a stud center line as the stud is driven through a stud capturing space. Accordingly, the applied combinations of (1) Pettersson, Finland and at

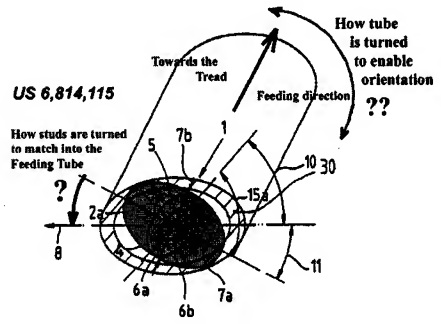
least one of Ostrovskis and Russia and (2) Pettersson, Japan and at least one of Ostrovskis and Russia would not have rendered obvious the features recited in claim 16. Claims 23-28, being indirectly dependent upon base claim 16, are allowable for at least the same reasons as for the base claim, as well as for the respective additional features recited in these dependent claims.

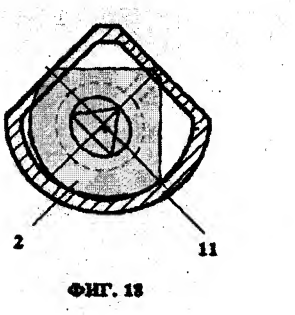
Additional Grounds For Novelty And Non-Obviousness Of The Invention Of The Application

Ostrovskis definitely teach, chapters [0008], [0009], [0045] and Fig. 6 that a pipe with a proper cross-sectional surface must be used, when shooting the studs into unvulcanized tread; and Russia teach, page 8, right column, lines 1-11, "While passing through the guiding tube and the charging tube the antiskid studs are orientated longitudinally and circumferentially, which depend on to their specific configuration.", and page 8, left column, lines 50-57, "..it is necessary that antiskid studs supplied from the storage reach the area of the outlet opening in already oriented position. It is an obligatory condition to enable an operator to fit the antiskid stud in the tire treads...", and in the Claim on page 8, lines 56-58 "the guiding tube and the charging tube are implemented as guide members for orientation of the antiskid stud". Both Ostrovskis and Russia consider the pipe/tubes to be the only component(s), which can have effect on the orientation of non-round studs, and that such non-round pipe/tube is obligatory. Accordingly, both Ostrovskis and Russia expressly discard the use of fingers/lips for the purpose of orientation. According to the invention of the Application no tube/pipe is needed, which is contrary to the teaching of Ostrovskis and Russia. ***Instead, only jaw fingers and a plunger is needed in the invention of the Application.***

For the systems of Ostrovskis and Russia the studs must somehow be correctly rotated prior to feeding into the pipe/tube, otherwise the studs cannot go into the pipe/tube in question. Neither Ostrovskis nor Russia discloses any device for the purpose of rotating studs. This is visualized in the picture below. If studs are coming from storage/reservoir towards the input end of the feeding tube according to Ostrovskis or Russia in one of the random positions, shown in grey color below, the insertion of the studs into the tube is impossible, because the border areas of the stud collide against end of the tube. To avoid collision the studs must have exactly the orientation of the feeding tube in order to enable gliding inside the tube. But both Ostrovskis and

Russia lack to describe this kind of device, though Russia indeed drops a hint by saying, page 8, left column, lines 60-63, "As a rule antiskid studs arrive from the storage into the guiding tube already as orientated by their bottom flanges toward the outlet opening of the tube.", but does not disclose any means for doing this.





ФИГ. 18

SUMMARY

– When the studs are in storage they are in random orientations.

– Both Ostrovskis and Russia, which are the only publications mentioning orientation at all, expressly define that it is just the tube, which make the orientation.

– Both Ostrovskis and Russia, however, lack disclosure of how the non-round studs being in random positions could be fed into a non-round tube. Neither Ostrovskis nor Russia describes how the orientation mismatch between non-round studs coming in random orientations and the non-round tube could be eliminated.

– Feeding tubes [shown in Ostrovskis and Russia] cannot effect any orientation, *i.e.*, they cannot change the orientation, but only transfer studs from one place to another place while maintaining the orientation of the studs if attained by a non-disclosed device beforehand.

– Lips [in Russia, not in Ostrovskis] and pusher rods [in Russia, not in Ostrovskis] can only randomize the positions of the studs, *i.e.*, destroy orientation if somehow attained. Alternatively, the lips and the pusher rods do not have any effect on orientation.

Consequently, there does not exist any system prior to this invention, which can effect orientation of the studs when installed into the tread of a tire. Ostrovskis and Russia disclose only a hope that the studs would be orientated, but lack to describe such device.

Devices according to Ostrovskis and Russia and Pettersson do not disclose any means, alone or combined, which could really turn or rotate the studs around their longitudinal axix!

Conclusion

Based on the foregoing, Applicant respectfully submits that the claims are drawn to allowable subject matter and that the application is in condition for allowance. Should the Examiner believe that anything further is necessary to place this application in better condition for allowance, the Examiner is requested to contact Applicant's representative by telephone.

Respectfully submitted,

KLARQUIST SPARKMAN, LLP

One World Trade Center, Suite 1600
121 S.W. Salmon Street
Portland, Oregon 97204
Telephone: (503) 595-5300
Facsimile: (503) 595-5301

By /Jeffrey B. Haendler/
Jeffrey B. Haendler
Registration No. 43,652